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Reported Effects of Coronavirus Disease Pandemic on Provision of Skilled Antenatal and Delivery Care Among Nurses and Midwives in Ibadan, Nigeria

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ABSTRACT: *The World Health Organization has declared Coronavirus Disease 2019 (COVID-19) pandemic a global public health emergency. However, documentation on its implication on the provision of skilled care during pregnancy and childbirth in low and middle-income countries like Nigeria is limited. Therefore, this study assessed the reported effect of the pandemic on the provision of skilled antenatal and delivery care among nurses and midwives in Ibadan, Nigeria. A descriptive study was conducted using a quantitative approach. A validated questionnaire was used to collect data from randomly selected 121 nurses and midwives in the selected hospitals. Data were analyzed using SPSS version 25.0. Descriptive analysis was done using percentages, and Pearson correlation was used to assess the association between respondents' years of experience and the perceived influence of COVID-19 on the provision of maternal health services.Findings showed 82.6% and 53.7% of the respondents reported a reduced number of antenatal visits and shorter services hour respectively. Also, 57.9% and 66.1% of the respondents reported restricted interaction with clients and reduced patronage respectively. Also, 66.9% of the respondents reported limited admission facilities during labor. There is no significant relationship between the years of experience of the respondents and the perceived influence of COVID-19 on the provision of antenatal/delivery care with a correlation coefficient (r = 0.137) and significant value of (p-value = 0.068). The outbreak of the COVID-19 pandemic affected the provision of skilled care during pregnancy and childbirth. Accessibility to skilled antenatal and delivery care was reduced among pregnant women.*

KEYWORDS: Coronavirus, disease, pandemic, skilled antenatal, delivery care, nurses, midwives, Ibadan, Nigeria

INTRODUCTION

The coronavirus disease 2019 (COVID-19) is a progressing disease outbreak caused by severe acute respiratory syndrome coronavirus 2(SARS-CoV-2)[1]. The outbreak was labeled a Public

Health Emergency of International Concern on 30 January 2020 and a pandemic on 11 March 2020 by the World Health Organization. The outbreak was reported to have occurred worldwide, with the first case in Africa reported in Egypt in February 2020[1]. Nigeria is one of the countries affected globally with the first presentation confirmed in Lagos State on 27 February 2020[2].

Since the outbreak commenced, the international community has made concerted efforts to control the virus's spread and diminish its impact on global mortality rates. Governments are taking necessary actions at local, national, regional, and global levels and health officials are developing guidance for health systems and the public[1]. As WHO stated, "People, efforts, and medical supplies all shift to respond to the emergency". This often results in the neglect of basic and routine essential healthcare services. People with health issues unrelated to the pandemic have more difficulties accessing healthcare treatments[1]. Globally, healthcare systems are either already overstretched to their maximum capacity or are on the verge of becoming overwhelmed [3]. While the COVID-19 pandemic is likely to increase death rates due to the virus, it also has the potential to indirectly increase mortality due to the expected disruption of health systems[4]. Due to limitations in the availability and utilization of health services during the COVID-19 pandemic, there will be detrimental consequences on skilled prenatal and delivery care[4].

Limitations in the provision of high-quality maternal health services by experienced health workers and the increased reluctance among women to use the health system due to fear of contracting the infection could lead to a modest decrease in the coverage of antenatal and delivery care[5]

According to the World Health Organization, maternal death rates are one of Nigeria's major healthcare challenges, accounting for about 34% of worldwide maternal deaths in Nigeria and India alone [6]. According to the World Health Organization (WHO), Nigeria has a maternal death rate of 814 per 100,000 live births[7] Antenatal care is widely regarded as the cornerstone of reducing child mortality and increasing maternal health globally[8]. Medical care and procedures provided to pregnant women from the time of conception until the child is born are given under the aegis of antenatal care[9].

According to UNICEF and WHO, the proportion of births attended by skilled healthcare providers is an official indicator for Goal 3 of the Sustainable Development Goals[10]. According to a study published in the Lancet Global Health, using more midwife services could help fill gaps in access to health care and reduce maternal mortality[11]. This study further showed that a slight increase in midwife-delivered care could result in significantly lower maternal mortality, emphasizing the importance of antenatal and delivery care.

Many Sub-Saharan African countries have been known to face a variety of issues that threaten the quality of health care provided to the population. With the advent of the COVID-19 outbreak, it is not impossible that access to quality antenatal care services in the region may be further threatened due to competition for limited healthcare resources. It is critical for all African countries to put

plans in place to ensure that antenatal care services, which are equally vital and needed, are not disrupted as a result of the urgent need to shift limited resources to combat the COVID-19 pandemic[12].

There are only a few data available on the influence of COVID-19 on the antenatal and delivery care provided by nurses and midwives in Nigeria; however, given the inter-related nature of women's experiences and midwifery care, it is reasonable to conclude that there might be some similarities in terms of the stress and apprehension experienced. Professional opinion, editorials, experiences, and news reports globally illustrate the additional stress and anxiety that midwives have endured during the COVID-19 pandemic. Only a few research have been conducted in Nigeria to investigate the perception of Nigerian nurses and midwives on the influence of covid-19 on the provision of skilled antenatal and delivery care. This study seeks to join the rank of studies that have provided information to this effect.

METHODS

Study design: This study adopted a descriptive quantitative cross-sectional design to assess the perceived influence of COVID-19 on skilled antenatal and delivery care among nurses and midwives in the University College Hospital, Ibadan, and Adeoyo Maternity Hospital, Yemetu, Ibadan. Research instrument from the previous study was adapted for this study, extensive literature reviews ensured content validity. The questionnaire was also duly vetted and corrected by the study supervisor to ensure content validity. The UI/UCH ethical research committee also reviewed the questionnaire before it was administered to respondents.

Study setting: For this study, two major health facilities in Ibadan were considered, the only tertiary institution in Oyo state, University College Hospital, Ibadan, and Adeoyo Maternity hospital, Yemetu in Oyo State. The University College Hospital is a flagship tertiary healthcare institution in Nigeria, offering world-class training, research, and services. The University College Hospital (UCH) was strategically located in Ibadan, the largest city in West Africa which is also the seat of the first University in Nigeria, the University of Ibadan. Adeoyo Maternity Hospital, Yemetu is a secondary healthcare facility widely known within the state for delivering maternal care services. The hospital provides maternal and child healthcare services to people in Ibadan and its surrounding. Both institutions have facilities solely dedicated to the provision of maternal services. These facilities include-antenatal a clinic, labor ward, antenatal ward, gynecological ward, lying-in ward, children's ward, immunization clinic, post-caesarian section ward, gynecological clinic, and family planning clinic.

Study participants/ Sampling technique: Nurses and midwives in the University College Hospital, Ibadan, and Adeoyo Maternity Hospital, Yemetu, Ibadan were considered for this study. This study adopted a random sampling method. It included all consenting nurses and midwives working in the labor and antenatal units in the University College Hospital, Ibadan, and Adeoyo Maternity Hospital, Yemetu. This study excluded nurses and midwives in other departments aside

from antenatal and delivery units in the University College Hospital, Ibadan, and Adeoyo Maternity Hospital, Yemetu, Ibadan. It also excluded all non-consenting Nurses and Midwives working in the labor and antenatal units in the University College Hospital, Ibadan, and Adeoyo Maternity Hospital, Yemetu, Ibadan.

Data Collection: A self-administered questionnaire was used to collect data for this study after receiving ethical approval from the UI/UCH ethical review committee. The period of data collection lasted four weeks. Respondents were carefully selected using the simple random technique. Each participant was duly informed of the purpose and benefits of the study, after which consent was gotten before the researcher handed a questionnaire to each respondent. The respondents were also assured of the confidentiality of the data collection process. The research instrument consisted of four sections; Section A, contained questions on the socio-demographic characteristics of the participants (gender, age, years of experience, marital status, religion, qualification, and name of institution), Section B (level of COVID-19 preparedness) Section C (midwives' perception of the influence of COVID-19 on the provision of skilled antenatal and delivery care), Section D (effect of COVID-19 guideline protocols on the provision of skilled antenatal and delivery care during the pandemic).

RESULTS

Socio-demographic characteristics of respondents

Table 1 below shows that most respondents fall in the age group of 30-39 (37.2%) and 40-49 (37.2%). Most of the respondents were female (90.1%), and as regards experience, the majority of the respondents had 6-10 years (28.1%) of experience and only 1.7% of the respondents had more than 30 years of experience. The distribution of the respondents among the two main religions shows that the respondents were more Christians (83.5%). The marital status of the respondents revealed that most of them were married (67.8%). With respect to qualification, there were more respondents with BNSc. (42.1%) and finally, the majority of the respondents were from University College Hospital, Ibadan (53.7%).

Table 1: SOCIO-DEMOGRAPHIC INFORMATION (N=121)

Variables		Frequency	Percentage
Gender	Male	2	1.7
	Female	109	90.1
	Prefer not to say	10	8.3
Age group (years)	20-29	19	15.7
	30-39	45	37.2
	40-49	45	37.2
	50 and above	12	9.9
Experience (years)	0-5	18	14.9
	6-10	34	28.1
	11-15	25	20.7
	16-20	26	21.5
	21-25	10	8.3
	26-30	6	5.0
	>30	2	1.7
Marital Status	Single	29	24.0
	Married	82	67.8
	Separated	10	8.3
	Divorced	0	0.0
Religion	Christianity	101	83.5
	Islamic	20	16.5
	Others	0	0.0
Qualification	RN	4	3.3
	RM	39	32.2
	BNSc	51	42.1
	MSc	27	22.3
	DNP	0	0.0
Name of Institution	University College Hospital, Ibadan	65	53.7
	Adeoyo Maternity Hospital, Yemetu	56	46.3

Midwives' Perception of the Influence of COVID-19 on the Provision of Skilled Antenatal and Delivery Care

Table 2 examined midwives' perception of the influence of COVID-19 on the provision of skilled antenatal and delivery care. It shows that 66.9% and 53.7% of the respondents agreed that the pandemic partially or completely disrupted antenatal and delivery care services and that skilled midwives and nurses were partially or fully reassigned to support COVID-19 respectively. 81.8% and 90.1% of the respondents agreed that, strategies were put in place to ensure continued provision of antenatal and delivery care and that, staffing issues and implementing safety protocols were the major challenges faced in the provision of maternity services during the pandemic respectively. 53.7% and 51.2% of the respondents agreed that, they found it easy to reach their workplace and that, their professional expectations of providing maternity care were met during the pandemic respectively. 63.6% of the respondents agreed that, with respect to their expectations, some of their care experiences turned out better than they thought they might during the pandemic. On the other hand less than 50% of the respondents agreed that: telemedicine was used to replace

in-person antenatal visits, part of or all the maternity wards were converted to treat COVID-19 patients, there was a reduction in the number of women who sought maternity services, they were satisfied with the quality of maternity care they provided, they adopted the use of technology to counsel or provide care to women or their babies remotely, and that there were changes in staffing level in their ward.

Table 2: Midwives Perception of the Influence of Covid-19 on the Provision of Skilled Antenatal and Delivery Care=121

Variables		Frequency	Percentage
Antenatal and delivery care services have been partially or completely disrupted owing to the pandemic	YES	81	66.9
	NO	33	27.3
	I DON'T KNOW	7	5.8
Skilled midwives and nurses were partially or fully reassigned to support COVID-19	YES	65	53.7
	NO	43	35.5
	I DON'T KNOW	13	10.7
Strategies were put in place to ensure continued provision of antenatal and delivery care during the pandemic	YES	99	81.8
	NO	20	16.5
	I DON'T KNOW	2	1.7
Telemedicine was used to replace in-person antenatal visits and consultations during the pandemic	YES	21	17.4
	NO	90	74.4
	I DON'T kNOW	10	8.3
During the pandemic, was a part of or all the maternity ward converted to treat COVID-19 patients?	YES	11	9.1
	NO	108	89.3
	I DON'T kNOW	2	1.7
Staffing issues, obtaining supplies/supply shortages and implementing safety protocols and guidelines were the major challenges faced in the provision of maternity services during the pandemic	YES	109	90.1
	NO	12	9.9
	I DON'T kNOW	0	0.0
There was an axacerbated reduction in the number of women who sought maternity services due to fear of contracting the virus	YES	56	46.3
	NO	47	38.8
	I DON'T kNOW	18	14.9
I found it easy to reach my workplace easy during the pademic	YES	65	53.7

	NO	55	45.5
	I DON'T kNOW	1	0.8
I am satisfied with the quality of maternity care I provided during the pandemic	YES	60	49.6
	NO	61	50.4
	I DON'T kNOW	0	0.0
I adopted the use of technology to counsel or provide care to women or their babies remotely during th pandemic	YES	48	39.7
	NO	70	57.9
	I DON'T kNOW	3	2.5
There were changes in staffing level in my ward	YES	54	44.6
	NO	67	55.4
	I DON'T kNOW	0	0.0
My professional expectations of providing maternity care were met	YES	62	51.2
	NO	56	46.3
	I DON'T kNOW	3	2.5
Compared with my expectations, some of my care experiences turned out better than I thought they might during the pandemic	YES	77	63.6
	NO	43	35.5
	I DON'T kNOW	1	0.8

Effect of COVID-19 on Antenatal Care

Table 3 examined how outpatient antenatal care was affected during the pandemic. From the table, 83.5% and 74.4% of the respondents agreed that, appointments were scheduled further apart for consecutive patients and that, group classes or group counseling sessions were suspended respectively. 65.3% and 73.6% of the respondents agreed that, shorter operating hours or reduced number of days care was available and that, women with high-risk pregnancies were prioritized with face-to-face care respectively. Also, 51.2% and 62.8% of the respondents agreed that, they were unable to see all patients who need care in person and that, the number of women accessing antenatal care decreased respectively. Conversely, only 37.2%, 34.7% and 8.3% of the respondents agreed that, provision was suspended completely for some or all of the time; telemedicine was used to provide care; and that, fees charged for antenatal care increased respectively.

Table 3: How Outpatient Antenatal Care Was Affected N=121

Variables		Frequency	Percentage
Suspended provision completely for some or all of the time	YES	45	37.2
	NO	76	62.8
Appointments sheduled further apart for consecutive patients	YES	101	83.5
	NO	20	16.5
Group classes or group counselling sessions suspended	YES	90	74.4
	NO	31	25.6
Shorter operating hours or reduced number of days care is available	YES	79	65.3
	NO	42	34.7
Prioritizing women with hight-risk pregnancies with face-to-face care	YES	89	73.6
	NO	32	26.4
Unable to see all patients who need care in person	YES	62	51.2
	NO	59	48.8
Use of telemedicine to provide care	YES	42	34.7
	NO	79	65.3
Number of women accessing antenatal care decreased	YES	76	62.8
	NO	45	37.2
Fees charged for antenatal care increased	YES	10	8.3
	NO	111	91.7

Effect of COVID-19 on Delivery Care

Table 4 examined how inpatient intrapartum/childbirth care was affected during the pandemic. From the table, 53.7% and 66.9% of the respondents agreed that, shorter operating hours or reduced number of days care was available and that, the space on the labour ward was reduced due to creation of COVID-19 isolation rooms/spaces respectively. Also, 69.4% and 66.1% of the respondents agreed that, the number of beds was reduced due to social distancing measures and that, the number of women accessing facility childbirth care reduced respectively. On the other hand, only 28.9%, 36.4%, 33.9%, and 15.7% of the respondents agreed that, provision was suspended completely for some or all of the time; demand for home-based childbirth care increased; birth companions were screened or tested for COVID-19; and that fees charged for childbirth care increased respectively.

Table 4: How Inpatient Intrapartum/Childbirth Care Was Affected N=121

Variables		Frequency	Percentage
Suspended provision completely for some or all of the time	YES	35	28.9
	NO	86	71.1
Shorter operating hours or reduced number of days care is available	YES	65	53.7
	NO	56	46.3
Reduced space on the labour ward due to creation of COVID-19 isolation rooms/spaces	YES	81	66.9
	NO	40	33.1
Reduced number of beds due to social distancing measures	YES	84	69.4
	NO	37	30.6
Reduced number of women accessing facility childbirth care	YES	80	66.1
	NO	41	33.9
Increased demand for home-based childbirth care	YES	44	36.4
	NO	77	63.6
Screening or testing birth companions for COVID-19	YES	41	33.9
	NO	80	66.1
Fees charged for childbirth increased	YES	19	15.7
	NO	102	84.3

Effect of COVID-19 Guideline Protocols on the Delivery of Skilled Antenatal and Delivery Care During the Pandemic

Table 5 examined the effect of COVID-19 guideline protocols on the delivery of skilled antenatal and delivery care during the pandemic. From the table, 87.6% and 51.2% of the respondents agreed that, delay in procuring additional PPE and supplies for immediate use affected the delivery of maternity care and that, the social distancing measures required for the prevention of COVID-19 spread made them felt isolated from women and families respectively. Also, 82.6% and 57.9% of the respondents agreed that, the lock down affected the number of hospital visits for antenatal and delivery care and that, the use of PPE made it difficult for their clients to enjoy their services fully because of the absence of personal contact as were the case before the pandemic respectively. Only 42.1% of the respondents agreed that, establishing and updating COVID-19 guideline protocols in the hospital posed organizational problems that affected maternity service delivery.

Table 5: Effect of Covid-19 Guideline Protocols on the Delivery of Skilled Antenatal and Delivery Care During the Pandemic N=121

Variables		Frequency	Percentage
Establishing and updating COVID-19 guideline protocols in the hospital posed organizational problems that affected maternity service delivery	YES	51	42.1
	NO	59	48.8
	I DON'T kNOW	11	9.1
Delay in procuring additional PPE and supplies for immediate use affected the delivery of maternity care	YES	106	87.6
	NO	14	11.6
	I DON'T kNOW	1	0.8
The social distancing measures required for the prevention of COVID-19 spread made me feel isolated from women and families	YES	62	51.2
	NO	58	47.9
	I DON'T kNOW	1	0.8
The lock down affected the number of hospital visits for antenatal and delivery care	YES	100	82.6
	NO	16	13.2
	I DON'T kNOW	5	4.1
The use of PPE made it difficult for my clients to enjoy my services fully because of the absence of personal contact as were the case before the pandemic	YES	70	57.9
	NO	36	29.8
	I DON'T kNOW	15	12.4

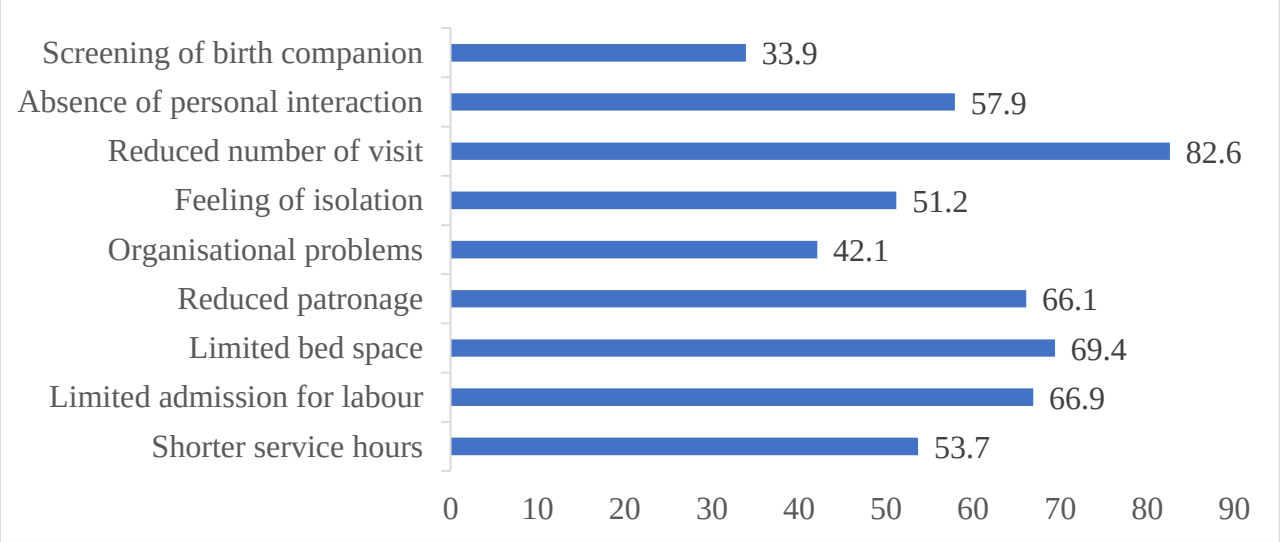

Figure 1: Reported effect of COVID-19 pandemic on the provision of maternal health services

Table 6: Association Between Respondents' Years of Experience and the Perceived Influence of Covid-19 on the Provision of Antenatal and Delivery Care.

		Years of experience
Perceived influence of COVID-19	Pearson Correlation	.137
	Sig. (1-tailed)	.068
	N	121

DISCUSSION

This study showed that the respondents were majorly between 30 years and 39 years of age and 40-49 years, this shows that most of the respondents were in their late adulthood. Most of the respondents have between 16-20 and 11-15 years of experience. Majority of the respondents are female and 67.8% are married. Also, most of the respondents are Christians and this can be due to a greater number of churches in the south-west region. More than three quarters of the respondents had formal education. The majority of the respondents had tertiary education which is due to hia gh number of schools in the southwest and the higher drive for knowledge, success,and money due to the economic situation in the country. The majority of the respondents are workers in the University College Hospital, Ibadan.

From the findings of this study, the midwives' perception of the influence of COVID-19 on the provision of skilled antenatal and delivery care was revealed. 81.8% of the respondents agreed that strategies were put in place to ensure continued provision of antenatal and delivery care. This is similar to previous studies by Pant, et al[13] that many efforts have been made towards improving maternal health service utilization including information, education, and communication to raise awareness about the protection of mother and child during COVID-19, such that some countries have tried to open temporary birth centers, help hotlines, virtual consultation with obstetricians have been provided to women seeking maternal health care and that there is a consensus that utilization of maternal health services is essential as it reduces maternal and child mortality and improves the reproductive health of women. 90.1% of the respondents agreed that staffing issues and implementing safety protocols were the major challenges faced in the provision of maternity services during the pandemic, this is similar to a study done by Burgoyne et al,[14] that revealed that, with essential precautionary measures in place, obstetric healthcare providers may not be able to provide the highest quality care during the COVID-19 pandemic, client-provider interaction is severely hampered, and the time to get the care needed may be delayed as health workers try to protect themselves from the infection.

From this study, the findings revealed that the variables in the study negatively affected outpatient antenatal care during the pandemic. 83.56% of respondents agreed that appointments for consecutive patients were scheduled further apart, and 74.4% said that group classes or group therapy sessions were suspended, respectively. Shorter working hours or a reduced number of days care was offered, and women with high-risk pregnancies were prioritized with face-to-face care,

according to 65.3% and 73.6% of respondents, respectively. In addition, 51.2% and 62.8% of respondents agreed that they were unable to visit all patients who needed care in person and that the number of women seeking antenatal care had dropped. This finding is similar to that of Feyissa et al [15] , who found that overburdened healthcare systems, disruptions in care, and redirected resources can lead to non-pandemic-related maternal deaths, as well as a reproductive health emergency, which is especially true for African countries with low-resource health systems, such as Ethiopia. Also, Saccone et al,[16] agreed that COVID-19 has influenced pregnant women's perceptions; in a study conducted in a Naples hospital, greater than half of the participants described COVID-19's psychological impact as severe, and almost the same percentage of pregnant women expressed concern about the infection's vertical transmission.

During the pandemic, the variables in the study had a negative impact on hospital intrapartum/childbirth care. Shorter operation hours or a reduced number of days of care were provided, and space on the labor ward was reduced, according to 53.7% and 66.9% of respondents, respectively, due to the establishment of COVID-19 isolation rooms/spaces. In addition, 69.4% and 66.1% of respondents believed that social distancing measures lowered the number of beds available and that the number of women seeking facility delivery care decreased, respectively. This is in line with a study conducted in India by Anil, et al [17], which detected lower coverage across all maternal and child health interventions. There was a 2.26% decline in the number of institutional deliveries. Antenatal care services had the hardest hit, with a 22.91% decrease.

From the findings of this study, the variables in the study revealed that COVID-19 guideline protocols had a negative effect on the delivery of skilled antenatal and delivery care during the pandemic. 87.6% and 51.2% of the respondents agreed that delay in procuring additional PPE and supplies for immediate use affected the delivery of maternity care and that, the social distancing measures required for the prevention of COVID-19 spread made them feel isolated from women and families respectively. Also, 82.6% and 57.9% of the respondents agreed that, the lockdown affected the number of hospital visits for antenatal and delivery care and that, the use of PPE made it difficult for their clients to enjoy their services fully because of the absence of personal contact as were the case before the pandemic respectively. The result supports the findings of Balogun et al [18] that since the start of the COVID-19 pandemic, practically every country's health services have been disrupted. Also, reports from Global Financing Facility [19] revealed that the number of women who attended the recommended antenatal visits dropped by 18% in Liberia, and the number of women seeking medical care during pregnancy fell by 16% in Nigeria. Additionally, a recent modeling study across 118 countries estimated that between 8.3% and 38.6% more pregnant women could die each month. In countries like the Democratic Republic of Congo and Nigeria, this would add an additional 1,280 and 6,700 maternal deaths to the already swaying 16,000 and 67,000 respective maternal deaths per year [20]. These numbers resound a recent warning from the World Health Organization in Africa, which reported an increase in maternal deaths in 10 countries with the highest increases recorded in Comoros, Mali, Senegal, and South Africa.

Limitations of the study

The location was chosen for the study as well as the sample size of 121 Nurses and Midwives limit the generalization of the findings. Further studies with a larger number of institutions and sample size should test the conclusions.

Another limitation during data collection was low perception and lack of interest in the research among Nurses and Midwives at University College Hospital and Adeoyo Maternity Hospital. There is a limited number of previous research studies on the perceived influence of COVID-19 on the provision of skilled antenatal and delivery care among Nurses and Midwives.

CONCLUSION

A standardized questionnaire was used for the collection of data and findings gotten from the data analysis revealed that the provision of antenatal and delivery services was negatively affected during the COVID-19 pandemic. The interpersonal relationship between nurses/midwives was disrupted by the pandemic and the accessibility of pregnant women to skilled care during pregnancy and childbirth was negatively affected.

Policy implication

The negative effect of the COVID-19 pandemic on skilled antenatal and delivery care could further reduce institutional delivery in low and middle-income countries like Nigeria. Thus, further increasing the already high and unacceptable maternal and neonatal mortality in Nigeria. Hence, achieving the sustainable development goal targeting improving maternal health may be unrealistic. It is therefore recommended that government at all levels and non-governmental organisations should formulate policies or amend the existing policies on disaster/pandemic preparedness of healthcare providers.

REFERENCES

[1] World Health Organization . WHO; Geneva: 2020. Novel coronavirus (2019-nCoV) situation report 22.https://apps.who.int/iris/handle/10665/330991 Available at: [accessed 13 April 2020]

[2] Nigeria Centre for Disease Control. First Case of Corona virus Disease Confirmed in Nigeria [Internet]. 2020 [cited 2020 Apr 1]. Available from: https://ncdc.gov.ng/news/227/first-case-of-corona-virus-disease-confirmed-in-nigeria

[3] COVID-19 and the least developed countries. In: Development Policy and Multilateralism after COVID-19 [Internet]. UN; 2020. p. 45–52. Available from: https://www.un-ilibrary.org/content/books/9789210051828c008

[4] Timothy Roberton, Emily D Carter, Victoria B Chou, Angela R Stegmuller, Bianca D Jackson,Yvonne Tam, Talata Sawadogo-Lewis, Neff Walker, 2020. Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study, The Lancet Global Health, :https://doi.org/10.1016/S2214-109X(20)30229-1

[5] UNICEF. Maternal and newborn health and COVID-19. UNICEF Data; 2020
[6] World Health Organization. Trends in Maternal Mortality: 1990 to 2015: Estimates Developed by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Accessed December 19, 2019. https://reliefweb.int/report/world/trends-maternal-mortality-1990-2015-estimates-who-unicef-unfpa-world-bank-group-and
[7] World Health Organization. Trends in Maternal Mortality: 1990 to 2015: Estimates Developed by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Accessed December 19, 2019. https://reliefweb.int/report/world/trends-maternal-mortality-1990-2015-estimates-who-unicef-unfpa-world-bank-group-and
[8] Thembe Sylvia Patience Ngxongo Basic Antenatal Care Approach to Antenatal Care Service Provision, intechopen Published: November 5th 2018, DOI: 10.5772/intechopen.79361
[9] Ekabua J, Ekabua K, Njoku C. framework for making focussed antenatal care services accessible: A review of the Nigerian setting. ISRN Obstetrics and Gynecology. 2011. DOI: 10.5402/2011/253964
[10] Joint UNICEF/WHO database of skilled health personnel, based on population-based national household survey data and routine health systems. https://data.unicef.org/topic/maternalhealth/delivery-care/#.
[11] Andrea Nove, Ingrid K Friberg, Luc de Bernis, Fran McConville, Allisyn C Moran, Maria Najjemba, Petra ten Hoope-Bender, Prof Sally Tracy, Prof Caroline S E Homer, Potential impact of midwives in preventing and reducing maternal and neonatal mortality and stillbirths: a Lives Saved Tool modelling study, The Lancet Global Health, Published:December 01, 2020DOI:https://doi.org/10.1016/S2214-109X(20)30397-1
[12] Ogunkola, I.O., Adebisi, Y.A., Imo, U.F., Odey, G.O., Esu, E.& Lucero-Prisno, D.E. 2021. Impact of COVID-19 pandemic on antenatal healthcare services in Sub-Saharan Africa, Public Health in Practice, Volume 2, 2021, https://doi.org/10.1016/j.puhip.2021.100076
[13]Pant S, Koirala S, Subedi M. Access to Maternal Health Services during COVID-19. Europasian J Med Sci. 2020; 2(Covid-19 Special Issue): 48–53. [Google Scholar] [Ref list]
[14] Burgoyne ME, Elsamadicy EA, Cojocaru L, Desai A. COVID-19 Barriers to Care for Pregnant Patients in Prolonged Isolation. Case Reports in Obstetrics and Gynecology. 2020;2020:4. pmid:32908746
[15] Feyissa GT, Tolu LB, Ezeh A. Impact of COVID-19 Pandemic on Sexual and Reproductive Health and Mitigation Measures: The Case of Ethiopia. African Journal of Reproductive Health. 2020;24(2):246.
[16] Saccone G, Florio A, Aiello F, Venturella R, De Angelis MC, Locci M, et al. Psychological impact of coronavirus disease 2019 in pregnant women. American Journal of Obstetrics & Gynecology. 2020 223(2): 293295. pmid:32387321
[17] Singh AK, Jain PK, Singh NP, Kumar S, Bajpai PK, Singh S, Jha M. Impact of COVID-19 pandemic on maternal and child health services in Uttar Pradesh, India. J Family Med Prim Care. 2021 Jan;10(1):509-513. doi: 10.4103/jfmpc.jfmpc_1550_20. Epub 2021 Oct 30. PMID: 34017779; PMCID: PMC8132817.
[18] Balogun M, Banke-Thomas A, Sekoni A, Boateng GO, Yesufu V, Wright O, et al. (2021) Challenges in access and satisfaction with reproductive, maternal, newborn and child

health services in Nigeria during the COVID-19 pandemic: A cross-sectional survey. PLoS ONE 16(5): e0251382. doi:10.1371/journal.pone.0251382

[19] https://www.globalfinancingfacility.org/new-findings-confirm-global-disruptions-essential-health-services-women-and-children-covid-19

[20] Timothy Roberton, Emily D Carter, Victoria B Chou, Angela R Stegmuller, Bianca D Jackson,Yvonne Tam, Talata Sawadogo-Lewis, Neff Walker, 2020. Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study, The Lancet Global Health, :https://doi.org/10.1016/S2214-109X(20)30229-1